CLAIMS

1. Use of a defective recombinant adenovirus containing a suicide gene for the preparation of a pharmaceutical composition intended for the treatment of restenosis.

2. Use of a defective recombinant adenovirus containing a suicide gene for the preparation of a pharmaceutical composition intended for the treatment of restenosis by selective transfer of the said gene into the smooth muscle cells of the atheromatous plaque.

3. Use according to claim 1 or 2, characterized in that the suicide gene is chosen from the thymidine kinase gene and the cytosine deaminase gene.

4. Use according to claim 1 or 2, characterized in that the suicide gene is the human herpesvirus thymidine kinase (HSV-1 TK) gene.

5. Use according to one of the preceding claims, characterized in that the suicide gene is placed under the control of a promoter permitting its expression in infected cells.

6. Use according to claim 5, characterized in that the promoter is chosen from viral promoters, preferably the RSV LTR and CMV promoter.

7. Use according to one of the preceding claims, characterized in that the adenovirus comprises the ITRs, a sequence permitting encapsidation and the suicide gene.

8. Use according to claim 7, characterized in that the adenovirus comprises the ITRs, a sequence permitting encapsidation and the suicide gene, and in which the E1 gene and at least one of the genes E2, E4, L1-L5 is non-functional.

9. Use according to claim 8, characterized in that the adenovirus comprises the ITRs, a sequence permitting encapsidation and the suicide gene, and in which the E1 gene and the E4 gene is rendered non-functional.

10. Use according to claim 9, characterized in that the adenovirus comprises the ITRs, a sequence permitting encapsidation and the suicide gene, and in which all or part of the E1 and E4 regions are deleted.

11. Use according to one of the preceding claims, characterized in that the adenovirus is an adenovirus of human origin, preferably chosen from the serotypes Ad2 and Ad5.

12. Use according to one of claims 1 to 10, characterized in that the adenovirus is an adenovirus of animal origin, preferably chosen from canine adenoviruses.

13. Use according to one of claims 1 to 12, characterized in that the adenovirus is impregnated in a hydrogel.

14. Use according to claim 13, characterized in that the hydrogel is deposited on a balloon catheter.

15. Use according to claim 11, characterized in

that the adenovirus is administered via a balloon catheter of the perfusion catheter type.

16. Use according to claim 15, characterized in that the adenovirus is administered via a catheter of the channelled balloon catheter type.

17. Use according to claim 15, characterized in that the adenovirus perfused via a catheter of the perfusion balloon catheter type is impregnated in a hydrogel.

18. Use according to one of claims 1 to 12, characterized in that the adenovirus is impregnated in poloxamer.

19. Use according to claim 15, characterized in that the adenovirus perfused via a catheter of the perfusion balloon catheter type is impregnated in poloxamer.

20. Pharmaceutical composition comprising a defective recombinant adenovirus impregnated in a hydrogel.

21. Pharmaceutical composition according to claim 20, characterized in that the defective recombinant adenovirus contains a suicide gene.

22. Device for the percutaneous administration of genes, characterized in that it comprises a balloon catheter coated with a hydrogel, the hydrogel being impregnated with a defective recombinant adenovirus containing the said gene.

23. Device according to claim 22, characterized

in that the administration of genes is carried out selectively at the atheromatous plaque.

24. Device according to claim 23, characterized in that the administration of genes is carried out selectively at the smooth muscle cells.

25. Device according to claim 24, characterized in that, when genes are administered, this administration takes place with a selectivity of greater than 95 %.

26. Device according to claims 23 to 25, characterized in that the administration of genes is followed by a treatment with ganciclovir.

27. Device according to claim 26, characterized in that the percentage of infected cells is greater than or equal to 0.2 %.

28. Method of therapeutic treatment of restenosis, characterized in that it comprises the percutaneous administration of genes by means of a balloon catheter coated with a hydrogel, the hydrogel being impregnated with a defective recombinant adenovirus containing the said gene.

29. Method of therapeutic treatment of restenosis according to claim 28, characterized in that the administration of genes takes place selectively at the atheromatous plaque.

30. Method of therapeutic treatment of restenosis according to claim 29, characterized in that the administration of genes takes place selectively at the

smooth muscle cells.

31. Method of therapeutic treatment of restenosis according to claim 30, characterized in that the administration of genes takes place with a selectivity of greater than 95 %.

32. Method of therapeutic treatment of restenosis according to claim 31, characterized in that the administration of TK suicide genes is followed by a treatment with ganciclovir.

33. Method of therapeutic treatment of restenosis according to claim 32, characterized in that it induces a "bystander" effect.

34. Method of therapeutic treatment of restenosis according to claim 33, characterized in that this induced bystander effect permits a therapeutic efficacy even with a small percentage of infected cells.

35. Method of therapeutic treatment of restenosis according to claim 34, characterized in that the percentage of infected cells is greater than or equal to 0.02 %.